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ABSTRACT

This report evaluated a cooperative teaching program designed to provide supplementary diagnostic and prescriptive reading instructional services to New York City elementary school students who were more than one grade level behind in reading. Three hundred students in grades three through six received reading instruction in reading laboratories. Specific skill needs were identified and an individualized program of reading instruction was devised for each student. Students were tested on a pre and post basis, paraprofessionals were rated for performance, and teachers were interviewed. This report concluded that post test reading scores of students increased significantly over the anticipated post test scores. Paraprofessionals perceived their program experiences as contributing toward improved performance. Interview data reflected positive reactions to the programs on the part of classroom teachers, paraprofessionals, and students. The reading and language rating scale used in the program is included in the appendix. (JP)

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EVALUATION REPORT

Function No. 20-63417

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CHILDREN LEARN TO READ THROUGH COOPERATIVE TEACHING OF PARAPROFESSIONALS AND TEACHERS

SCHOOL YEAR 1975 - 1976

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An Evaluation of Selected New York City Umbrella Programs funded under a Special Grant of the New York State Legislature performed for the Board of Education of the City of New York for the 1975-1976 school year

UD017126

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PROGRAM DESCRIPTION

The Children Learn to Read Through Cooperative Teaching of Paraprofessionals and Teachers program was designed to provide supplementary diagnostic and prescriptive reading instructional services to students who are more than one year behind reading grade level. The program was conducted from November 1975 through June 1976. More than three-hundred students attending PS 327 in Brooklyn, N.Y. participated in the program. Two 3rd, two 4th, three 5th, and three 6th grade classes took part in the program. Each of the participating classes was selected after consultations among the program coordinator (principal), the reading teacher, and the classroom teachers.

Ten classes of thirty (30) students were scheduled into the Reading Laboratory to receive services. Forty-five minute sessions were held, twice per week. During each Laboratory session, the classroom teacher and paraprofessional accompanied the students. This enabled teachers and assistants to become familiar with diagnostic and prescriptive techniques and materials employed in the Laboratory. The schedule of sessions is presented below.

READING LABORATORY SCHEDULE AS IMPLEMENTED

Period	Monday	Tuesday	Wednesday	Thursday	Friday
1	5-1	6-1	6-2	4-2	6-1
2	3-1	6-2		3-1	6-3
3	3-2	6-3		3-2	5-2
4		5-2			5-3
5	4-1			4-1	
6	4-2	5-3		5-1	

During Laboratory sessions, a diagnostic and prescriptive approach was implemented. Using the Gilmore Oral Reading Test and the diagnostic component of the Random House Reading Program, assessment information was gathered on

each student. On the basis of this data, specific skill needs were identified and an individualized program of reading instruction was devised for each participant. Individual student programming relied heavily upon the Random House Reading Program, but also utilized the following reading instructional materials systems: Barnell-Loft Specific Skills Series, EDL Study Skills, and the SRA Reading Laboratory Kits, levels 1-b and 1-c.

Program Staff

Four (4) paraprofessionals participated in the program. Two were assigned to the Reading Laboratory and worked directly under the supervision of the school's Reading Teacher. The remaining two were assigned to classrooms and and received direct supervision from their classroom teachers. In addition, they received training and guidance from the Reading Teacher. Paraprofessionals who were assigned to classrooms were heavily involved in small group instruction. The two who worked in the Reading Laboratory provided individualized instruction.

The program was coordinated by the school principal while the Reading Laboratory operated under the direct supervision of the reading teacher.

EVALUATION PROCEDURES

The evaluation design specified three (3) evaluation objectives. Each objective is stated below and followed by the evaluation procedures.

Evaluation Objective #1:

To determine whether, as a result of participation in the Children Learn to Read Through Cooperative Teaching of Paraprofessionals and Teachers Program, the reading grade of the students will show a statistically significant difference between the real-post-test mean score and the antici-

pated post-test mean score as measured by the Gilmore Oral Reading Test.

Subjects: All students having participated in the program and having attended at least sixty (60) per cent of the scheduled Laboratory sessions.

Methods and Procedures: Alternate forms of the Gilmore Oral Reading Test were administered in November, 1975 (pre-test, form C) and in May of 1976 (post-test, form D).

Analysis of Data: Data was analyzed by the "real" (treatment) posttest vs. anticipated (without treatment) post-test method. The difference between the sample's predicted post-test mean grade equivalent score and the obtained post-test mean grade equivalent score was tested for statistical significance through the determination of the correlated t-ratio.

Evaluation Objective # 2::

Participating paraprofessionals in the program will demonstrate an improved level of performance as measured by the post-administration of a performance rating scale. The rating scale measured paraprofessional perception of development and improved level of performance.

Subjects: All participating paraprofessionals (4)

Methods and Procedures: Post-program administration of Performance Rating Scale.

Analysis of Data: Responses were tabulated and analysed.

Evaluation Objective #3

To determine the extent to which the program, as actually carried out, coincided with the program as described in the project proposal.

Methods and Procedures: Interviews with project coordinator, participating teachers, participating paraprofessionals and the school reading teacher. Structured observation guides were utilized in classroom and Laboratory observations.

Analysis of Data: Interview responses and classroom observations were tabulated and condensed into narrative summation.

FINDINGS

Evaluation #1

To determine whether, as a result of participation in the Children Learn to Read Through Cooperative Teaching of Paraprofessionals and Teachers Program, the reading grade of the students will show a statistically significant difference between the real-post-test mean score and the anticipated post-test mean score as measured by the Gilmore Oral Reading Test.

Results

Mean scores and findings are presented by grades as well as by the total of all participating grades. Scores yielded by the Gilmore Oral Reading test and used for evaluation in this report include the "Accuracy" score which measures word recognition and pronunciation, and the "Comprehension" score which measures reading comprehension. Also used in this report is the "Average" score which is a numerical average of the above two scores. The mean pre-test, postest, and predicted "average" scores as well as respective t-ratios and levels of significance are presented below in TABLE I.

TABLE I

MEAN PRE- and POST- AVERAGE SCORES by GRADE and TOTAL POPULATION AND LEVELS OF SIGNIFICANCE OBTAINED ON THE GILMORE ORAL READING TEST USING CORRELATED DATA t-TEST

Grade	N	Pre-Test Mean	Predicted Mean	Post-Test Mean	t-value	Level of Significance
3	53	2.63	3.69	3.43	2.9167	.01
4	57	3.30	3.72	3.40	2.2396	.05
5	81	3.29	3.65	4.12	5.3000	.01
6	76	4.46	4.86	5.40	4.5175	.01
Total	267	3.49	3.90	4.31	7.6549	.01

TABLE I shows that gains recorded in grades 3, 5, and 6 are significant at the .01 level. Gains made in grade 4 did not meet the .01 level test; however they did meet the test of significance at the .05 level. The gain achieved by the total group was significant at the .01 level and on that basis it can be stated that objective #1 was realized.

Additional analyses into the extent of gain made in the skill areas of accuracy and comprehension are presented on the following two pages. TABLES II and III summarize data by grade level and total population with regard to accuracy and comprehension respectively.

TABLE II

Mean Pre and Post - Accuracy Scores and Level of Significance by Grade and Total Population Obtained on The Gilmore Oral Reading Test Using the Correlated DATA t- test

GRADE	N	MEAN	PREDICTED MEAN	POST TEST MEAN	t- VALUE	LEVEL OF SIGNIFICANCE
3	53	3.05	3.67	3.74	.6712	N.S.
4	57	3.49	4.04	4.06	.2741	N.S.
5	80	3.64	4.02	4.19	2.3404	.05
6	74	4.62	5.05	5.06	.1007	N.S.
(3 thru 6)	264	3.76	4.24	4.31	1.7239	N.S.

TABLE III

MEAN PRE - AND POST - COMPREHENSION SCORES AND LEVELS OF SIGNIFICANCE BY GRADE AND TOTAL POPULATION OBTAINED ON THE GILMORE ORAL READING TEST USING THE CORRELATED DATA t- test

GRADE	N	MEAN	PREDICTED MEAN	POST-TEST MEAN	t-VALUE	LEVEL OF SIGNIFICANCE
3	53	2.35	2.78	3.31	4.2640	.01
4	57	3.17	3.66	3.96	2.1187	.05
5	79	2.90	3.19	3.93	6.1785	.01
6	76	4.22	4.61	5.70	6.6666	.01
(3 thru 6)	265	3.24	3.63	4.34	9.6743	.01

An examination of TABLES II and III shows that although highly substantial gains were made in the skill area of reading comprehension, this was not the case in reading accuracy. In TABLE II (accuracy scores) it can be noted that in grades 3,4, and 6, there is a negligible difference between the mean predicted score and the mean post score. Difference between predicted and post scores of the total group (grades 3 through 6) is also slight. With regard to comprehension gains, on the other hand, significant gains are reflected in each of the grade levels as well as in the mean difference of the total group. The findings suggest that the program is enabling students to make substantial gains in reading comprehension, but not in reading accuracy.

In TABLE IV below, we have a comparison of Total (grades 3 through 6) scores. Total accuracy, comprehension, and average scores are compared.

TABLE IV

COMPARED MEAN PRE- AND POST- ACCURACY, COMPREHENSION AND AVERAGE SCORES OF TOTAL POPULATION OBTAINED ON THE GILMORE ORAL READING TEST USING THE CORRELATED DATA T-TEST.

Skill Area	N	Pre-test Mean	Predicted Mean	Post-test Mean	t-value	Level of Significance
Accuracy	264	3.76	4.24	4.31	1.7239	N.S.
Comprehension	265	3.24	3.63	4.34	9.6743	.01
Average	263	3.53	3.78	4.27	4.1872	.01

Data produced in TABLE IV, consistent with that shown in the previous two tables, more dramatically reflects the disparity in gain between the Accuracy and Comprehension skill mean scores.* Thus we notice that the mean difference in the predicted and post-test accuracy score is only .07 while the mean difference in the predicted and posttest comprehension score is .71

Evaluation Objective #2

Participating paraprofessionals will demonstrate an improved level of performance as measured by the post-adminstration of a performance rating scale. The Rating Scale will measure paraprofessional perception of self-development and improved level of performance.

An eight item rating scale developed by the evaluator was administered to each of the participating paraprofessionals. The results are summarized in TABLE V below.

* as measured by the Gilmore Oral Reading Test

TABLE V

RATINGS BY FOUR EDUCATIONAL ASSISTANTS ON THEIR LEVEL OF PERFORMANCE

Area Rated For Improvement	Ratings			
	Disagree	Mildly Disagree	Agree	Strongly Disagree
Ability to diagnose reading and language problems	0	0	4	0
Working with students on an individual basis	0	0	3	1
Knowledgeability regarding instructional materials	0	0	2	2
Recognition of student progress	0	0	3	1
Provision of small group instruction	0	0	3	1
Ability to communicate with teachers	0	0	4	0
Communication with other school personnel	0	0	4	0
*Ability to prepare lesson plans	0	0	1	1

*Not applicable to two paraprofessionals who are Laboratory assignees

An inspection of TABLE V reveals that each of the items received positive ratings by all of the four paraprofessionals. The item which received the most positive response concerned the "development of knowledge regarding instructional materials." In general, paraprofessionals agreed that their ability to diagnose reading problems, work with students on an individual basis, recognize student progress, provide more effective small group instruction, and communicate with teachers and other school staff has improved as a consequence of their program participation. Thus their perceptions indicate improved level of development and performance. Objective # 2 was met.

Teacher Interviews

The evaluator conducted interviews with eight (8) of the ten classroom teachers having students in the program. Teachers were asked to rate a number of program factors. These factors and the Teachers' responses are presented in TABLE VI below.

TABLE VI

MEAN RATINGS - SELECTED PROGRAM FACTORS

Item Rated	Mean Rating
Suitability of physical facilities	4.75
Suitability of available materials	5.00
Administrative support	4.50
Training provided for paraprofessionals	5.00
Effectiveness of paraprofessionals	4.88
Positive attitude upon student motivation	4.50
Student participation and interest in the program	4.75
Parental interest in student progress	3.88
Assesment of student skill needs	4.50
Effectiveness of program planning	4.75

SCALE: Excellent 5, Very Good 4, Good 3, Fair 2, Poor 1

An inspection of the mean ratings reveals that the teachers rated those factors listed in TABLE VI highly. The one exception is "parental interest in student progress" which received a lower rating. All other ratings could be characterized as "very good" or "excellent".

In addition to the above rating scale, teachers responded to interview questions relating to other program factors. Responses indicated that teachers had access to individual student assessment data generated by the program as well as student progress information which pertained to students in their respective classrooms. When asked the question "What do you see as the major strengths of the program"? responses cited most frequently were: quality and variety of instructional materials, low-pupil adult ratio, individual attention, program organization and management, and the presence of the classroom teacher in the Laboratory during the period in which her students received program services. Teachers interviewed felt that students' performance in the regular classroom improved as a consequence of their participation in the program. Three teachers cited improved student self-confidence as well as academic improvement. Two teachers volunteered that students' work habits had undergone positive change.

Paraprofessional Interviews

Each of the four paraprofessionals was interviewed by the evaluator. Interview responses indicated that paraprofessionals received training in diagnostic training, utilization of a diagnostic-prescriptive approach, and in selection and use of instructional materials. In response to a question concerning daily work assignments, paraprofessionals indicated that most of their time was alloted to planning, supervising, and providing instructional activities to target students. Relatively little time was spent in clerical and non-academic tasks.

Paraprofessionals indicated that individual attention combined with the low student adult ratio were important in the program's effectiveness. When asked about communication and teamwork among the classroom teachers, the reading specialist, and the paraprofessionals, responses were positive, and suggested effective intra- staff communication.

Recommendations for program improvements offered by the paraprofessionals included: (a) structuring regular classroom activities so as to insure adequate application of reading skills learned in the Reading Laboratory, and (b) more parental involvement.

Classroom Observations.

During three on-site visits, the evaluator observed six Reading Laboratory sessions. At the time of these visits, the Laboratory facilities appeared adequate to meet the needs of the students. Observed student activities reflected previous preplanning and utilization of diagnostic information. Paraprofessionals appeared to be aware of the sequence of prescribed student learning activities. In each session students worked on assignments that were individually prescribed. The learning atmosphere in the Laboratory was relaxed and students appeared to be highly motiviated. Teamwork among the paraprofessionals and the Reading Teacher was outstanding. Materials observed in use included: SRA kits 1a and 1c, SRA Dimensions in Black, Barnell Loft Specific Skills Series, EDL Study Series, and The Random House Reading Program. In general, the evaluator was favorably impressed with the program's organization, functioning, and ability to encourage positive participation on the part of students.

SUMMARY AND RECOMMENDATIONS

Summary

The actual post-test mean reading score of students in the program increased significantly over the anticipated post-test score. Therefore, program objective #1 was realized. Evidence indicating that participating paraprofessionals perceived their program experiences as contributing toward an improved level of performance suggests that objective #2 was also realized. In the judgement of the evaluator, objective #3 was met as well. The program schedule, procedures, organization, facilities*, instructional materials, instructional approach, and staff utilization were consistent with proposal intent and description.

Testing data also revealed that gains achieved in reading comprehension were substantially greater than those made in reading accuracy. Interview data reflected positive reactions to the program on the part of paraprofessionals and classroom teachers. Interview and classroom observation data indicated highly positive student response.

*Physical facilities and premises were adequate.

RECOMMENDATIONS

The program is providing a necessary and effective set of instructional services to a population in need. Student and paraprofessional gains, as well as advantages to the participating classroom teachers, attest to the usefulness of the program. Consequently, it is recommended that the program continues.

Accuracy (word recognition) scores in some instances have demonstrated relatively little skill advancement on the part of the target students. Therefore, it is recommended that the following be considered in planning future programs: (a)reassess degree of emphasis upon instructional priorities related to word recognition skill development, (b) reexamine instructional materials and procedures regarding objectives for developing word recognition skills, (c)reexamine training emphasis, informal as well as formal, as provided to paraprofessionals and participating classroom teachers to determine its relevance to the development of word recognition skills.

Since current data indicate excellent gains regarding comprehension skills, it is recommended that current approach to the development of comprehension skills be continued.

Continue the use of current personnel, organization, materials and instructional approach (with modifications suggested in Recommendation (b) above).

READING AND LANGUAGE
RATING SCALE

Place an X in the space next to the item that best describes your reaction to the following statements.

1. My participation in the Program has improved my ability to diagnose student reading and language problems:

   _____ disagree mildy disagree agree strongly agree

2. My participation in the Program has made me more effective in working with students on an individual basis.

   ___ disagree ___ mildy disagree ___ agree ___ strongly agree

3. My participation in the program has ~~improved~~ made me more knowledgeable regarding instructional materials

   ___disagree ___ mildy disagree ___ agree ___ strongly agree

4. My participation in the program has made me more effective in recognizing student progress.

   ___ disagree ___ mildy disagree ___ agree ___ strongly agree

5. My participation in the Program has enabled me to provide more effective instruction to small groups.

   ___ disagree ___ mildy disagree ___ agree ___ strongly agree

6. My participation in the Program has taught me how to better prepare lesson plans.

7 ___ disagree ___ mildy disagree ___ agree ___ strongly agree

7. My participation in the Program has improved my ability to communicate with teachers.

   ___ disagree ___ mildy disagree ___ agree ___ strongly agree

8. My participation in the Program has enabled me to be more effective in my communications with the school personnel (e.g. counselor, principle)

   __ disagree __ mildy disagree ___ agree ___ strongly agree